QC ABSTRACT

Nameof Work:Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

Sl. No.	Item	Quantity As Per BOQ	Required No's of testes	Actual No's of testes	Testes	Frequency
1	WMM	494.04 Cum	-	-	-	-
		Gradation	5	5	-	-
		AIV	3	3	-	-
		Shape Test	3	3	-	-
		Atterberg Limits	5	5	-	-
2	DBM	164.68 Cum	-	-	-	-
		Quality of Binder	1	1	-	-
		AIV	1	1	-	-
		Shape Test	1	1	-	-
		Gradation	1	1	-	-
		Specific Gravity	1	1	-	-
		Stability of Mix	4	4	-	-
		Bitumen content	4	4	-	-
3	BC	141.71 Cum	-	-	-	-
		Quality of Binder	1	1	-	-
		AIV	1	1	-	-
		Shape Test	1	1	-	-
		Gradation	1	1	-	-
		Specific Gravity	1	1	-	-
		Stability of Mix	3	3	-	-
		Bitumen content	3	3	-	-

Assistant Executive Engineer
T. Dasarahalli Sub Division
Bagalagunte, BBMP
Bangalore-560073

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(Building Geo-Tech & Highway Materials Testing Laboratory)

An ISO 9001-2015 Certified Company

NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No.: CACE/BBMP/SN/W.No.14/2022-23 Date :06.07.2022

GRADATION FOR WMM

Client : **Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**

Agency : **Sri.Shivananda N, Contractor, Bangalore.**

Name of Work :Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing :06.07.2022

Material Type : Wet Mix Macadam

Oven Dry.Wt, gran 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	186	186	1.9	98.1	95-100
22.4	2531	2717	27.2	72.8	60-80
11.2	2140	4857	48.6	51.4	40-60
4.75	1843	6700	67.0	33.0	25-40
2.36	1188	7888	78.9	21.1	15-30
0.600	580	8468	84.7	15.3	8-22
0.075	1229	9697	97.0	3.0	0-5

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Agency : **Sri.Shivananda N, Contractor, Bangalore.**

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IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing :06.07.2022

Material Type : Wet Mix Macadam

Oven Dry.Wt, gran 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	196	196	2.0	98.0	95-100
22.4	2520	2716	27.2	72.8	60-80
11.2	2152	4868	48.7	51.3	40-60
4.75	1832	6700	67.0	33.0	25-40
2.36	1185	7885	78.9	21.2	15-30
0.600	621	8506	85.1	14.9	8-22
0.075	1239	9745	97.5	2.6	0-5

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GRADATION FOR WMM

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Agency : **Sri.Shivananda N, Contractor, Bangalore.**

Name of Work :Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing :07.07.2022

Material Type : Wet Mix Macadam

Oven Dry.Wt, gran 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	191	191	1.9	98.1	95-100
22.4	2522	2713	27.1	72.9	60-80
11.2	2163	4876	48.8	51.2	40-60
4.75	1843	6719	67.2	32.8	25-40
2.36	1175	7894	78.9	21.1	15-30
0.600	622	8516	85.2	14.8	8-22
0.075	1234	9750	97.5	2.5	0-5

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Name of Work :Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing :07.07.2022

Material Type : Wet Mix Macadam

Oven Dry.Wt, gran 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	185	185	1.9	98.2	95-100
22.4	2533	2718	27.2	72.8	60-80
11.2	2155	4873	48.7	51.3	40-60
4.75	1843	6716	67.2	32.8	25-40
2.36	1182	7898	79.0	21.0	15-30
0.600	578	8476	84.8	15.2	8-22
0.075	1236	9712	97.1	2.9	0-5

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IS Code: : IS 2386 (Part 1):1963(RA 2011)

Date of Testing :07.07.2022

Material Type : Wet Mix Macadam

Oven Dry.Wt, gran 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Requirement as per MORTH 5th edition table no 400.13
53	0	0	0	100	100
45	199	199	2.0	98.0	95-100
22.4	2539	2738	27.4	72.6	60-80
11.2	2169	4907	49.1	50.9	40-60
4.75	1839	6746	67.5	32.5	25-40
2.36	1179	7925	79.3	20.8	15-30
0.600	629	8554	85.5	14.5	8-22
0.075	1232	9786	97.9	2.1	0-5

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Aggregate Impact Value

Client	**Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**
Agency	**Sri.Shivananda N, Contractor, Bangalore.**
Name of the Work	Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	06.07.2022

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	87	88	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	295	294	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.77	23.04	**22.91**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

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Date: 07.07.2022

Aggregate Impact Value

Client	Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.
Agency	Sri.Shivananda N, Contractor, Bangalore.
Name of the Work	Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	07.07.2022

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	380	381	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	88	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	294	293	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.63	23.10	22.86

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

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Date: 07.07.2022

Aggregate Impact Value

Client	**Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**
Agency	**Sri.Shivananda N, Contractor, Bangalore.**
Name of the Work	Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.
IS Code	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Wet Mix macadam
Date of Testing	07.07.2022

Sl No.	Details	Test No. 1	Test No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	381	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	296	296	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	22.31	22.51	**22.41**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%(As per MORTH Specication table 400.12)

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DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**
Agency	**Sri.Shivananda N, Contractor, Bangalore.**
Name of Work	Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	06.07.2022

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	11.20	11.50	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	12.70	13.10	
	Combined Flakiness & Elongation index	23.90	24.60	

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Name of Work	Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	07.07.2022

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	11.30	11.40	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	12.50	12.90	
	Combined Flakiness & Elongation index	23.80	24.30	

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Name of Work	Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.
BIS code:	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	07.07.2022

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 400.12
1	Flakiness Index %	12.10	12.00	Combined Flakiness & Elongation index Max 35%
2	Elongation Index %	13.50	13.30	
	Combined Flakiness & Elongation index	25.60	25.30	

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Date :06.07.2022

ATTERBERG LIMITS TEST FOR WMM

Client : Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.

Agency : Sri.Shivananda N, Contractor, Bangalore.

Name of Work : Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 04.07.2022 to 06.07.2022

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	22.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CACE/BBMP/SN/W.No.14/2022-23

Date :06.07.2022

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**

Agency : **Sri.Shivananda N, Contractor, Bangalore.**

Name of Work : Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 04.07.2022 to 06.07.2022

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	21.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Date :07.07.2022

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**

Agency : **Sri.Shivananda N, Contractor, Bangalore.**

Name of Work : Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 05.07.2022 to 07.07.2022

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	22.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

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Assistant Executive Engineer
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Bagalagunte, BBMP
Bangalore-560073

For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

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Job No.: CACE/BBMP/SN/W.No.14/2022-23 Date :07.07.2022

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**

Agency : **Sri.Shivananda N, Contractor, Bangalore.**

Name of Work : Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 05.07.2022 to 07.07.2022

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	22.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Client : **Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**

Agency : **Sri.Shivananda N, Contractor, Bangalore.**

Name of Work : Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 05.07.2022 to 07.07.2022

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CACE/BBMP/SN/W.No.14/2022-23 Date :07.07.2022

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**

Agency : **Sri.Shivananda N, Contractor, Bangalore.**

Name of Work : Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

IS Code: : IS 2720(Part 5):1985

Date of Testing : 05.07.2022 to 07.07.2022

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	21.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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JobNo: CACE/BBMP/SN/W.No.14/2022-23 Date : 18.07.2022

TEST RESULTS OF AGGREGATE SHAPE TEST
(Flakiness & Elongation)

Client : **Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.**

Agency : **Sri.Shivananda N, Contractor, Bangalore.**

Name of work : Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.

BIS Code : IS 2386 Part (1):1963

Date of Test : 18.07.2022

Type of Mix : Dense Graded Bituminous Macadam

Sl.No.	Flakiness Index Value(%)	Elongation Index Value(%)	Total(Combined Flakiness and Elongation)(%)	Requirements
1	12.90	13.40	26.30	Maximum allowable Combined Flakiness and Elongation Indices for Dense Graded Bituminous Macadam is 35% as per Table 500.8 MORTH Specification.
2	12.40	13.70	26.10	

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Job No.: CACE/BBMP/SN/W.No.14/2022-23 Date: 18.07.2022

Aggregate Gradation Test

Client	Assistant Executive Engineer, Dasarahalli Sub Division, BBMP, Bangalore.
Agency	Sri.Shivananda N, Contractor, Bangalore.
Name of the Work	Comprehensive Development works in Ward No.14,Dasarahalli Sub division,BBMP,Bangalore.
BIS Code	IS 2386(Part 1):1963(RA 2011)
Sample I / D	Hot mix Plant, Bangalore.
Type of Mix	Dense Graded Bituminous Macadam
Date of Testing	18.07.2022

Total Weight of Sample: **10000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.10	Remarks
37.50	0	0.0	0	100	100	Gradation satisfies Grade-II MORTH specification
26.50	715	7.2	7.15	92.85	90 - 100	
19.00	1265	12.7	19.80	80.20	71 - 95	
13.20	1381	13.8	33.61	66.39	56 - 80	
4.75	2511	25.1	58.72	41.28	38 - 54	
2.36	1097	11.0	69.69	30.31	28 - 42	
0.300	1318	13.2	82.87	17.13	7 - 21	
0.075	1165	11.7	94.52	5.48	2 - 8	

Total Weight of Sample: **10000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.10	Remarks
37.5	0	0.0	0	100	100	Gradation satisfies Grade-II MORTH specification
26.5	683	6.8	6.83	93.17	90 - 100	
19	1418	14.2	21.01	78.99	71 - 95	
13.2	1141	11.4	32.42	67.58	56 - 80	
4.75	2418	24.2	56.60	43.40	38 - 54	
2.360	1164	11.6	68.24	31.76	28 - 42	
0.300	1311	13.1	81.35	18.65	7 - 21	
0.075	1181	11.8	93.16	6.84	2 - 8	

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